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UNITED STATES OF AMERICA.

Nature's Bee Book:

A

MANUAL,

FOR REARING AND MANAGING THE ITALIAN AND NATIVE BEE IN THE MOST PROFITABLE MANNER TO THEIR OWNERS, BEING THE RESULT OF MORE THAN FIFTEEN YEARS EXPERIENCE IN SCIENTIFIC AND PRACTICAL

BEE CULTURE.

BY

W. A. FLANDERS, A. M.,
AUTHOR OF "THE HONEY BEE AND HIVE."

THIRD NEW EDITION.

MANSFIELD, O:
PRINTED BY L. D. MYERS & BROTHER.
1867.

Price 25 cts. by Mail.

HANDLING BEES.

I have handled bees at the following State Fairs:

United States' Fair at Cincinnati, O	1860
New England States' Fair at Brattleboro, Vt	1866
Vermont State Fair at Montpelier, Vermont	1853
Vermont State Fair at Rutland, Vermont	1854
Vermont State Fair at Burlington, Vermont	1857
Michigan State Fair, at Detroit, Michigan	1860
Michigan State Fair at Kalamazoo, Michigan	1863
Indiana State Fair at Indianapolis, Indiana	1863
Ohio State Fair at Zanesville, Ohio	1859
Ohio State Fair at Dayton, Ohio	1860
Ohio State Fair at Cleveland, Ohio	1863
Illinois State Fair at Decatur, Illinois	1864
Iowa State Fair at Burlington, Iowa	1864
Vermont State Fair at Brattleboro, Vermont	1866
Michigan State Fair at Adrian, Michigan	1865
Michigan State Fair at Adrian, Michigan	1866
Indiana State Fair at Ft. Wayne, Indiana	1865
Indiana State Fair at Indianapolis, Indiana	1866
Ohio State Fair at Dayton, Ohio	1866
Illinois State Fair at Chicago, Illinois	1866
Wisconsin State Fair at Janesville, Wisconsin	1865
New York State Fair at Utica, N. Y	1865
New York State Fair at Saratoga Springs	1866

My improvements have been awarded First Premiums at the State Fairs of all of the above States and the United States and New England Fairs.

W. A. FLANDERS,
Shelby, Ohio.

NATURE'S BEE BOOK,

A

PRACTICAL TREATISE,

CALCULATED TO ASSIST THE BEE-KEEPER IN OVERCOMING THE DIFFICULTIES AND MYSTERIES OF BEE-KEEPING AND INSURE PROFITABLE RETURNS FOR LABOR AND CAPITAL INVESTED.

BY

W. A. FLANDERS, A. M.,

PROPRIETOR OF

THE BEE-KEEPERS' INSTITUTE,

AND

KELLEY'S ISLAND ITALIAN BEE APIARIES; INVENTOR OF FLANDERS' PATENT MOVABLE COMB BEE-HIVES; IMPORTER OF ITLLIAN BEES, &C., &C.

MANSFIELD, O:
PRINTED BY L. D. MYERS & BROTHER.
1867.

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Entered according to Act of Congress, in the year 1867, by
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for the Northern District of Ohio.

PREFACE.

The following work is designed as a directory, to aid, to explain, and accompany my improvements in Bee culture.

It comprises the result of many years experience and attentive observation; and, when studied in connection with my improved Bee Hives, it will afford all that is requisite for the successful husbandry of Bees.

Avoiding a voluminous essay on the history of the Honey Bee, it has been thought proper to present the ideas and improvements in a plain and lucid manner, so that any person, suitably located, may learn to rear and successfully manage bees, and avail himself of the profitable benefits derived from their labors.

It is a lamentable fact that most of the modern treatise published upon this subject, appear to be narrations of conjecture and vague speculations, and do not embody that which is immediately practical and helpful, derived from successful experiments and daily experience.

In order to realize the greatest advantages from Bee culture, its practical management must be based on, and adapted to ""Dzierzon's Theory," (which will be found in this work) the fundamental principles of which are deducted from the accurately known habits of bees, and based upon their natural characteristics, unchangeable by human wisdom or artifice.

Having fully satisfied myself of its truthfulness and nicety of adaptation, I cheerfully recommend it with a full consciousness of its worth, knowing that errors published, with a fair and apparently candid endorsement would not only damage those whom I hereafter desire to claim as friends and patrons, but would destroy the reputation to which I now publicly lay claim.

W. A. FLANDERS.

☞ We shall send copies of this Manual to the publishers of newspapers and periodicals, and would be pleased to have all such notice the work and send copies of papers containing such notices, with terms for advertising in their respective papers; in that case they will be allowed to copy from this work by giving the proper credit.

☞ All the cuts in this work were got up for it and copyrighted to us, and must not be copied by others, as we shall prosecute all such plaigarists.

INDEX.

A

PAGE.

Apiary, directions for stocking, purchasing bees, &c. 31
April management 38
August management 39
Artificial swarming, when and how performed .. 22
Artificial swarming, with a movable-comb hive . 23

B.

Bees, improved method of wintering 41
Bees, feeding 35
Bees, taming 32
Bees, transferring 29
Bees operation of transferring 30
Bee-charm, how to use 33, 34
Bees, general (monthly) management of 37–41
Bees, how to keep them in a hive from year to year without "running out" 36
Book Bee-Hive, side and back view of 14, 15
Bee-Keeper's Institute 47
Bees, ventilating them 36

C.

Club rates for hives, rights, &c. 63
Cash business, necessity of doing 62
Claims (Patent) 15, 16
Claims (General) 16

D. PAGE.

December management with movable-comb hive 41
"Dzierzon's Theory" 44

E.

Explanation of cuts 25, 26

F.

February management 38
Flanders' movable-comb hives 13

G.

General remarks 17

H.

Honey, removing surplus 29
How rights and hives sell 61
Handling bees. (See inside front cover.)
How to prevent the moth 32

I.

Italian honey bee 46, 47
Introducing queens 49

R.

Robbing 29
Registration for bee-hives 20
Rearing queens 26–49

S.

Swarming, cause of, and migrating to the woods 10
Supplying queens to destitute swarms 26
Surplus honey, how to obtain a large amount... 28

PAGE.

September management in movable-comb hives. 40
September management in common hives..... 40
Silver medal described..... 60
Shipping queen bees by mail 20
Surplus honey, how to remove it 29

T.

The honey bee..... 9
To increase stocks one-third annually, artificially 24
To hive bees into a movable-comb hive from a bush 28
Transferring bees from one hive to another 29
Test of purity for Italian bees..... 48
The Press 55
To capture wild bees 54
The advantage of artificial swarming 21
Testimonials 58
Taming bees 32

THE HONEY BEE.

The wonderful economy and providence of the Honey Bee early engaged the careful attention of mankind. While other insects—the spider, the hornet and the ant—equally have excited our admiration, when watching their mechanical skill and provident industry, the delicious luxury obtained by the labor of the Bee, confides it to the particular care of man, who rears and domesticates inferior animals, that they may minister to his daily wants and pleasures. The industrial efforts, the patient labor, the healthful sobriety and fervent loyalty of this little insect, merits more than equal courtesy with the ant, which the wisest of men drew from seclusion to public observance by a pointed and well recognized proverb.

Since a judicious and well-timed execution of action with a profitable end in view, is the correct criterion by which we are enabled to distinguish rationality, we are necessitated to admit that many of the characteristics of the Bee, and other associated tribes of insects, approximate to the reasoning faculty. In large communities, concert of action is acknowledged, in order to procure the requisite quantity of supplies for the maintenance of the community, while a combination of mutual intelligence is exerted in such a manner as to distribute labor, equilibrate the products, and extend the sphere of active power in order to yield plentiful stores.

One of the greatest difficulties of the past, attendant upon the successful husbandry of the Bee, seems to have been in properly defining the boundary, where instinct assumes the characteristics of reason, and discriminating between the methodical operations of implanted laws, and the result of acquired knowledge and habits. This has led many to classify the *modus operandi* of the Bee-Hive under the general name of the labor of instinct.

That the Bee possesses a certain power or disposi-

tion of mind, the exercise of which implies exquisite mechanical skill in architecture, in the accumulation of wealth and in successful social relations; and that it apparently manages these operations, at the same time, independently of all anticipations of consequences, will not militate against our own theory, well fortified by an intimate acquaintance with its life and habits, that the management of its domestic affairs is similar to our own, conducted by reason and experience under the circumstances which daily surround it.

It matters not, then, whether we define its curious operations *instinct* or *instinctive reasoning*, in order that we may fully understand the working economy of this useful insect as seen in the varied thickness of the comb, extending from the top to the bottom of the hive, or in the symmetrical diameter of the "brood cells," each carrying its hexagonal angles (excepting the "queen cell,") with the mathematical precision to such a degree as to excite the admiration and esteem of savants and philosophers; or when we view the power of systematic effort, in the luxurious stores of royal food, harvested in due season for a sterile winter's sustenance, presenting a tableau of industry and common effort for man to imitate.

Then let us consider this wonderful community, with its teachings, as a *science* rather than a stereotyped action or instinct, and we shall be enabled to pursue the study of MODERN BEE CULTURE, as a source of knowledge of all that pertains to the insect as an accomplished artisan, as well as a profitable remuneration.

Cause of Bees Swarming, and Migrating to the Forests.

Possessed of one of the "Book Hives," the bee keeper can observe a regular sequence in the changes in the domestic life of a swarm of bees, while in its normal condition—that is, before giving off its first swarm.

The period of incubation by the queen commences early in the spring. It is rapidly generative, and when the honey season approaches, the cells are well

stocked with eggs, larva, &c. At this time, the working bees sally forth to labor, day after day with untiring assiduity, to stock their homes with a winter's supply of provender. During the busy season they intimate a negligence toward the royal blood by packing cell after cell with their wealth, and rapidly contracting the queen's domains—the cells for her deposits. The breeding space of the hive thus becomes rapidly narrowed, and finally the queen, having no empty cells, locates in some remote place, generally on or near the edge of a comb, and continues her deposits. The latter, on the edge of the comb, are eaten by the working bees. Thus situated, the royal influence of the queen is limited, and unexerted. The wealth of the community has unsettled the kingdom. The entire swarm seems to be disloyal. It presents the condition of a nation which has lost its sovereign. The working bees, powerful in wealth, construct royal residences, or "queen cells," in which they rear queens, and to be certain lest the royal blood should become extinct. The royal family consists of many queens (after the first swarm in the season), heirs expectant, and when these youthful queens are about to hatch, the old queen, jealous of her regal honors, undertakes to destroy her rival queens yet unhatched. Unable to succeed, as an army of workers surround and defend them, the old queen abdicates her throne, and sallies forth from her late dominions, accompanied by her loyal subjects, old and young, whirling and buzzing in dire confusion. After all of the disaffected have left the hive, they settle with the queen upon a shrub or bush. This is what constitutes "swarming."

In swarming, it is believed that a regular and permanent organization is not entirely effected until after the departure of the swarm from the parent hive to cluster in a body, not unlike a mass convention. Immediately on swarming, the greatest tumult and confusion ensues throughout their ranks, at the same time manifesting a desire to alight sufficiently far from their late abode, so as not to be interrupted or annoyed while completing their organization, and arrangements for their prospective home. Here we notice a striking peculiarity. All the bees that are

capable of taking wing, young, middle-aged and aged (except those that are employed in nursing the young larva, brooding over the crysalis, or are out in the fields), accompany the swarm to seek their new habitation.

Here is wisdom and order created out of disorder and rebellion. The Author of all things has "most wisely" fixed their dispositions so as to prevent the overthrow of the old colony. A large number of bees are absent in the fields amassing honey, at the time when the swarming takes place. These, no doubt, amid the unsettled condition of home affairs, would join the new colony and leave the parent home unprotected and defenceless. The combs would become despoiled and ravaged by the irruption of those little barbarians, the moth family; the infant queens would die from want of careful nursing; the germ of another new colony—the larva and chrysalis—would be lost in the general wreck, without the protection afforded by these absentees, who, when they return, offer the necessary care to preserve the household with its interests.

When a new colony leaves the hive, and goes off without alighting on a shrub or bush, it is, as a general thing, those swarms which hang upon the outside of the hive. It is an unusual occurrence, that swarms which hang upon the outside of the hive, leave until they have sent off ambassadors to select a suitable home for their future abode.

Now, if bees are hived immediately after they have alighted, or before they have despatched their agents to select a new tenement, they will not leave at all, if their new residence has been made agreeable, and clear of everything offensive to them, and sufficiently commodious (for it is want of room that causes swarming.) Then, to secure the new swarm, we recommend "artificial swarming." This is easily and effectually accomplished in my new "Book Hive," a description, together with the mode of operating, is hereafter given.

W. A. Flanders' Movable-Comb Bee-Hives.

Each successive year places these hives still higher in the estimation of an appreciative public. It is now past fifteen years since my first improvement in bee-hives was offered to the apiarians of the United States. Since which time I have been employed in handling and experimenting with the honey bee, in the Eastern and Western States. I now commence another year of study and experience with renewed cheerfulness, on account of the discoveries relative to the habits, disposition, and other general characteristics, which have been made by me, only to incite me to further study. I likewise feel happy that my humble efforts have met with such generous appreciation. Valuable improvements have been added to my hives the past year, as well as having made many important discoveries in the nature and working economy of this interesting insect. Many things are yet, without doubt, to be learned; and whatever observations or discoveries may be made in the future, shall be freely announced to the public. No fear is entertained that succeeding revalations will in any wise be contradictory or annihilatory of principles already laid down in any of my publications, as they have been satisfactorily established as natural laws, and have been abundantly verified.

To enable the cultivator to avail himself of all the advantages of the already known habits of the bee, in order to promote their prosperity, and enable the common bee-keeper to learn practically all that belongs to its culture, I have invented a hive upon a modified plan of the celebrated "Debeauvoy Hive of 1851," differing materially from the "Common Movable-Comb Hive" of the present day. I have completed a series of observations with it, all of which have been highly satisfactory and profitable. Its structure, its commodiousness, its accommodating departments, are skillfully adapted for the home of

these fruitful little artizans. It is denominated the "Book Bee-Hive," and is advertised with that title.

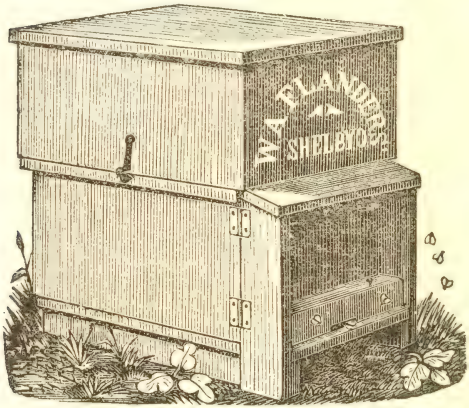


FIG. 1.—BOOK BEE-HIVE.

(Patented by W. A. Flanders.)

The above and following cuts represent W. A. Flanders' latest improvement, which is a modification of Debeauvoy's Movable-Comb Hive of 1851, and W. A. Flanders' Patented Movable Comb Hive of April 5th, 1864, with subsequent improvements. This hive, it will be seen, opens in the rear; the Comb Frames, being hung on suitable hinges, may be opened readily, removed and returned, without injury to the combs or bees, by removing the top boxes and cap above them. Figure 1 shows the front and side of the hive. Figure 2 shows the side and rear of the hive, with one side opened, the frames articulating on their hinges.

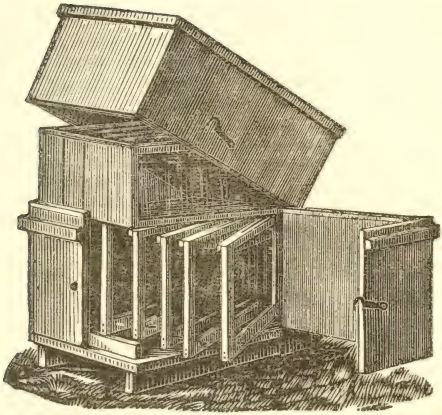


FIG. 2.—BOOK BEE-HIVE—SIDE AND BACK VIEW.

(Patented by W. A. Flanders.)

Our Patents and Claims.

We will now explain our patents and improvements, as embraced in the above hives. United States Letters Patent No. 42,181, granted to W. A. Flanders, April 5th, 1864.

"CLAIMS."

First—I claim in combination with a dividing hive constructed substantially as specified, hinging the comb frames, by means of the extension hinge E F, to the back or front walls, so that, in opening the hive, the comb frames are brought out of the hive in the manner and for the purposes set forth.

Second—I claim so hinging the back or front of the hive, and attaching the comb frames thereto, that on opening the hive, all the comb frames attached to one section may be swung out of the hive together, as and for the purposes specified.

Third—I claim in combination the curtained tube J, the division board H, tube H', and glass H", operating as described for the purpose specified.

Fourth—I claim the Queen and Drone cages, when constructed and operated as specified.

Fifth—I claim the disk K, with the openings 1, 2, 3 and 4, in combination with the opening L, arranged and operating as and for the purpose set forth.

Sixth—I claim forming the joints of any portion of the bee-hive that opens and shuts so that the angle and edge of the parts forming the joint or joints will not separate upon opening the hive, or impinge upon each other when the parts are being closed, substantially as specified, for the purpose set forth

W. A. FLANDERS.

Witnesses: { JNO. H. COX, ABM. FARRINGTON.

"GENERAL CLAIMS."

1st. I claim the sanded or glassed paper for the comb guides, as set forth.

2d. I claim the sanded surfaces for the interor of the bee-hives to prevent the bees sticking or gluing the parts together.

3d. I claim the use of sanded paper for lining the passages which communicate from comb to comb, ensuring an easy communication for the bees to the outside combs for supplies in winter.

4th. I claim the necessary ways or passages for the bees, from the breeding chamber of the hive up through the comb frames into the surplus honey boxes above, as set forth.

5th. I claim the reversable front entrance having the diverging ways, or passages for the bees to enter, to the right and left of the common entrance, for the purpose of excluding the sunlight, moths, robber bees, and storms from the interior of the hive, and producing a uniform temperature in total darkness, while the bees are allowed to pass and repass without hindrance, thus protecting them from the dangers which beset them at any time of the year.

6th. I claim the preserver filled with calcined clay

or pounded brick, placed on the frames and in combination with the hive and frames in winter, as specified.

7th. I claim ventilating the hive through the outside of the comb frames and the diverging "ways" of the common entrance, as set forth.

W. A. FLANDERS.

Witnesses: { J. Z. BRECKBILL, T. H. WIGGINS.

General Remarks.

From the above it may be seen that we have secured more advantages than any other hives possess. I claim that with my improvements as above, no swarm properly provisioned and prepared need ever "freeze out" in the coldest climate, when wintered on their "summer stands" in the open air. Nor will they fly out in the sunniest days, and die upon the ground in cold weather, but remain quietly in a semi-torpid state in the dark, while no moisture is near them. I have by experiment satisfied the most skeptical that a "shallow chamber" above and in connection with the frames, is a "shallow concern," *of no use*, but a positive injury to the bees in the winter, while it can (better) be dispensed with at all times So also with "movable honey boards," the top of the comb frames form the best "honey board," or foundation for the honey receptacles; at the same time the queen should be prevented from going between the frames into the honey boxes, to injure the box honey with her brood. This is accomplished in my hives, while the "necessary passages for the bees are preserved." From the most extensive experiments, I am satisfied that the size and shape which M. Quinby has adopted is the *safest* and *best* that can be used in any country. *I* am satisfied "as much depends on the shape and size of a bee-hive as any one thing," as Mr. Quinby remarks. I can not make the matter more explicit than to give Mr. Quinby's explanation of the most suitable dimensions for a hive: "Size of the brooding chamber, (inside measure) 12½ inches high, 12 inches wide, and 19½ inches long."

Mr. Quinby's Remarks on Hives.

"I will notice some of the different forms, and the reader may decide for himself which, under the circumstances, suit him best, and let this be an answer to all who would write me to inquire which I consider the best hive, with the shape of the hive:—(12x19½x12½, &c.) I am satisfied, the depth is all that the comb will sustain when filled with honey, and the greater length of each requires a less number (8 frames) to fill the hive The bees will store the back end with honey and rear their brood in the front end, and use nearly every comb for both purposes. This is the rule in properly managed stocks. When the winter approaches there are empty cells in the front end, and honey enough in the other to last through the cold weather, without obliging the bees to change from one comb to another to obtain it. They have only to move backward as the honey is consumed, on the same principle that they would move upward in a hive deeper from top to bottom than from front to rear. I would not have these frames the longest way up and down, for *two reasons:*

First—You could not raise a frame 20 inches in height out of the hive and return it without hitting the sides occasionally, and arousing the bees.

Second—There would be too little room on top for boxes. Most of these movable comb hives are nearly square, which shape does not suit me. Some of them have ten or twelve frames seven or eight inches in depth by fourteen or fifteen in length. Towards fall only a part of these in the middle of the hive will contain brood; the outside combs are filled throughout with honey, the middle combs contain but little, and the bees begin the winter there. If they are in the cold, and consume the little honey there is in these centre combs, they are quite sure to starve before getting a supply from the outside ones."

The above remarks show Mr. Quinby to be well posted in the worthlessness of "low flat hives." After speaking of the above as the true form and size, Mr. Quinby remarks, "This is the hive I principally use, and I like it rather better than I do Mr. Langstroth's. He has fixtures about his that must be con-

sidered more ornamental than useful, and for which the bees will not perform any extra labor." (See Quinby's Mysteries of Bee Keeping Explained, pages 68 to 72.)

In my Book Hive the bees can not gum or stick the frames together or put in traverse combs, as in other hives. The brood chamber is easily augmented or diminished to suit the size of the colony to be put into it. The honey boxes are a great saving and improvement over the boxes in common use. They are in close communication with the working chamber, and with each other, inducing the bees to work in them with certainty and dispatch. The surplus boxes are easily adjusted to any convenient size, either before or after they are filled with honey. Any needed amount of honey may be taken from a honey box without breaking what is left, and the box closed and kept in the best condition until all is used. The honey is worth about five dollars per hundred pounds more in my sectional boxes than in *plain* boxes, as the boxes can be divided into single combs of from one to two pounds, without breaking a cell or losing a drop of honey, this suiting the retail dealer.

The swarm can be examined in the winter to good advantage by opening one side, and frames may be taken therefrom, or the accumulations of filth and dead bees removed at any time without annoying the bees, and the bees can be hived in a satisfactory manner by opening one side and shaking them into it. In most of the hives the boxes are too small and about six or seven inches high, allowing but one tier of boxes to be placed on the hive at once. Where a greater number of boxes is desired in the working chamber for surplus honey, a rim six or seven inches deep may be placed on the hive, so as to raise the cap and admit of the second tier of boxes which should be placed beneath the first set after they are about filled. In this way a much greater amount of surplus honey can be secured, as the bees will generally fill the two tiers of boxes as soon as they will a simple tier, in order to close the gap between the upper boxes and main hive.

Registration for Bee Hives.

I have invented a very efficient and simple method of keeping a proper record of everything pertaining to bee-keeping, which greatly assists the bee-keeper in all the various manipulations of the bee-hive. By its use, the Bee-keeper can tell at a glance the condition of each stock; the number of maturing queens or anything else, as easily as to tell the time of day by the clock. It is painted on the hive or box, with a stencil plate and brush, when ordered, and is designed to relieve the bee-keeper of much of the care in *watching bees in the swarming season.*

The following letter shows how my new method of registration is appreciated:

BRIGHTON, April 5, 1867.

W. A. Flanders—Sir: Yours with the plan of your registration is received. I like it very much. Such a plan would have saved me much time and countless examinations last season. You may send me one of the stencil plates, and I will forward the amount of your bill for the same. I think it the most valuable thing I have seen for a long time, and you certainly should be paid for it. Your method of sending queens by mail will indeed be a great advance in the right direction. Very respectfully,

ELLEN S. TUPPER.

Shipping Queen Bees by Mail.

I have the pleasure to announce to my patrons that I have devised a method of "shipping queen bees by mail," and have perfected the plan by which we will undertake to send them by mail and *warrant their safe arrival*, where there is no express office any where near you in the country. We are the first to attempt to do this. We have ordered queens from Europe by *mail*. This will be of great advantage to those ordering queens of *us*. The apparatus we send the queens in will not be allowed to be used by others, except by license from us. It is just what is needed for introducing queens safely to the native bees; all the instructions for introducing queens, with the ap-

paratus, is sent to the purchaser ten days in advance of the day on which the queens will be shipped. The greatest care will be taken in our shipments, whether by mail or express, and we desire our customers to notify us if our Bees are not received in good order.

The Advantages of Artificial Swarming.

I shall endeavor in this chapter to convince the bee-keeper that artificial swarming is important and valuable.

It is a fact well understood and now firmly established in minds of all scientific apiarians, that, to succeed in bee culture, the stocks must be kept strong —that is, largely populated. It is almost unattainable when they are permitted to act with natural swarming. It may be natural, but it is very uncertain. They sometimes swarm too many times, at other times not at all. When no swarming occurs, the queen becomes old and superannuated, yields no increase of stocks. The apiary soon becomes reduced and profitless. In many cases such longevity brings on entire extinction. Many times in which the stock hive gives birth to two or three swarms, the cultivator resorts to the "Brimstone Theory" to save them from the moth, robbers or the winter chill. Artificial swarming has been practiced, and recommended by many ancient writers and bee men, among whom we notice Huber, Bonner, Keys, Dr. Scudmore, De Gelieu, M. Shirah. Our modern writers, Quinby, Harbison, Phelps, Kidder, Metcalf, Underhill, Langstroth, Prof. J. P. Kirtland, Ellen S. Tupper and others, strongly corroborate the opinions of the former.

The following will show the superiority of artificial over natural swarming. Mr. Aaron Grimm writes the "Wisconsin Farmer" Dec. 26, 1866: "I have increased the number of my stock-hives to 318, which I have wintered in, besides a lot sold and taken up; from twenty-two hives since 1861. I claim to have succeeded very well with the Italians. I reared nearly 300 fertile queens from one and her progeny last summer. About 100 of those queens proved to be pure, and the balance are primary bastards, which will raise pure next season. Every bee-keeper should understand it is not very difficult to Italianize a moderate apiary of from 12 to 25 stocks in a month by

spending about an hour per day. In 1865 A. H. Hart, of Stockbridge, Wisconsin, increased his stock from 38 to 103, artificially, and got 1,700 pounds of surplus honey. In the fall, he sold 1,200 pounds of the honey for $400, and twenty-seven of the swarms for $179, and wintered the balance."

In 1866, Bidwell Brothers, of Minnesota, wrote the "American Agriculturist" as follows: "Our aim the past season was to get our bees into frame hives, and Italianized, and to secure the largest possible amount of surplus honey.

Bees have generally done poorly in our State this season on account of wet weather; our statement for this year is as follows:

At the beginning of the season we had—

97	swarms black bees in	frame hives at $12			$1,164
66	" " "	board " at 8			528
41	" " "	straw " at 8			328
204					2,020
One year's interest at 10 per cent. on value bees					202
One year's interest at 10 per cent. on hives and apparatus					120
					2,342

At the close of the season the account stands:

7,021	lbs. honey sold in frames at 25c		$1,755 25
3,117	" " " boxes, composed of dark and unsealed honey at 23c		761 91
2,980	lbs. on hand in boxes at 30c		894 00
810	" strained honey, 2d quality at 22c		178 00
1,419	" " 1st " at 25c		354 75
15,347	lbs.		3,899 11
	252 lbs. wax at 35c		88 20
	256 swarms Italian bees, worth		5,120 00
			9,107 31
	Deducting above amount		2,342 00
	Leaves profit		6,865 31

Artificial Swarming—When and How Performed.

The time for artificial swarming is dependent on two circumstances—the state of the season and the condition of the stock to be operated on.

Supposing the spring to be early, we first ascertain that drones (male bees) exist in the hive, either hatch-

ed or otherwise. Artificial swarming may then be performed with certainty of success. As a general rule, it is better to wait until the first appearance of the drones, about which time there is an active busy population, some vigorously working about their home, others returning heavily ladened with the fruits of their industry. This can be usually seen in about a month after the queen has commenced laying drone eggs. The stock is then in a sufficiently forward condition to be operated upon, as then it generally contains unhatched queens in the embryo state.

Artificial Swarming.

HOW DONE WITH THE "MOVABLE COMB HIVE."

Artificial swarming is effected with the aid of movable frames, the same as in the Book-Hives," with this difference, that instead of dividing the hive, the frames are lifted out of the "movable comb hive."

OPERATION.

Remove the old stock a little distance from its usual place. Set an empty hive in the place in which the stock stood. This is done in order to prevent disappointment and consequent confusion among the returning bees, when they arrive at home from their tour over the fields. Blow a little smoke into the swarm from a lighted cotton rag, or use the "Bee Charm," which is always preferable, to induce the bees to satiate their appetites with honey, in order that they may have no disposition to sting. Take off the boxes above the frames; lift out three frames and with a soft feather brush wing all the bees off the comb back into the old stock. Put the comb frames into the new hive, and thus take all the frames out excepting three, which should be left in the old stock for supplies until they become rich enough to support themselves.

The three frames should be put near the centre of the hive, and the unfilled frames on the outside in both hives; after adjusting the frames in both the hives, put on the boxes and cap and set the hives within a foot of where the old hive stood, one to the right and the other a foot to the left. This will locate them about three feet apart. Mark the hive con-

taining the three filled frames, *as it contains the old queen*. In three days, if there is any material difference in the strength of the hives, the strongest may be removed a few feet farther off, which will strengthen the other.

To Increase Stocks One-third Annually by Artificial Means.

At a suitable time for making artificial swarms, remove all the combs but three, and brush the bees back into the hive with a feather brush, as before explained. Call this Hive No. 1. After filling it up with empty frames, set it in its orginal place on the stand. The combs without bees taken from No. 1 should be put in No. 2 hive, with three empty frames added to fill the hive. The comb left should contain eggs, &c. (See Fig. 3.) Select another hive, No. 3, and remove it to a suitable place in the apiary, to stand during the remainder of the season. Now put No. 2 where No. 3 stood, and the work has been completed (unless you wish to supply No. 2 with a queen, the manner of which will be explained hereafter).

This method is very simple, and based upon the well-known disposition of bees to return to their old habitation. The bees of No. 3, which are luxuriating on the flowers of the surrounding fields, return to No. 2, their old locality, and enter. Their constructive skill and industry soon accumulate comb and honey, If no new queen has been supplied them (which should be done as hereafter explained), they will proceed to raise a new queen, after which they will continue to populate, and collect largely for winter stores. No. 1 is now in precisely the same condition as a new swarm in its normal condition, and will speedily fill its hive with surplus box honey, if the season should favor out-door labor. No. 3 will of course be reduced in population, and will not probably favor swarming during the season, but store honey in large quantities.

No. 2 being a queenless hive, and the population likewise reduced, it is too weak a colony to afford protection to the queens, when the first queen hatches, and she will destroy all the rival queens and cells, when the

swarm quietly remains to collect like the rest. (See Fig. 5.) If a queen is supplied to No. 2, at the time the hive is set up, of course they will not lose time in rearing one, and she will shortly produce a numerous posterity to labor and collect during the remainder of the season.

This method of artificial swarming cannot be too highly commended, when a moderate increase of stock with a large amount of surplus honey is desired. A bee-keeper not well skilled in bee-culture, should make this system his rule. I will add, that it should only be practiced on pleasant days, while a large proportion of bees are on the tour of honey prospecting.

EXPLANATION OF CUTS.

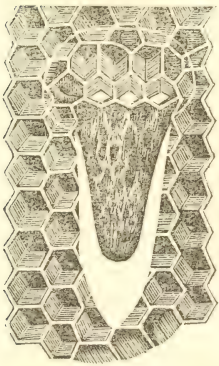


FIG. 2.

Fig. 2 represents the method of introducing queen cells. The light line shows the circle of the knife in the comb. The queen's exit is below in the open space.

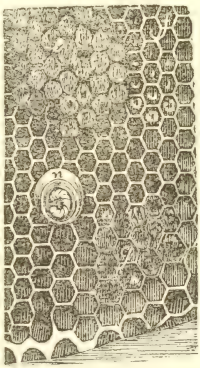


FIG. 3.

Fig. 3 represents a piece of brood comb which the different stages the eggs undergo in passing to the perfect bee. *f*, eggs changing to larva; *e* the worker bees just before hatching out; *n* shows a "Royal Cell" with the grub in it, three days old; *g* is the drone brood capped over.

FIG. 4.

Fig. 4 represents the edge of a comb with two queen-cells attached. *a* shows where the queen has just emerged from the cell and left the cap attached at its back edge where she made her exit below, head foremost; *b* shows a perfect queen-cell, from which the queen has not hatched.

FIG. 5.

Fig. 5 represents the edge of a piece of comb with imperfect queen-cells attached; *d* shows where the embryo queen has met a violent death, rival queens having torn the sides of the cell open; *c* shows the way the workers reduce the cells to an acorn shape after they have been demolished by a rival queen.

Fig. 2 is natural size. Figs. 3, 4 and 5 are reduced one-half.

Raising and Supplying Queens to Destitute Swarms.

This subject is replete with interest. It forms the most important chapter in the scientific culture of bees. It is important because necessary. It is scientific because of the general and unchangeable laws pertaining to it. Every bee-keeper should give it his practical attention, accompanied with close observation and study. Bee-culture without queen-raising,

can only be temporal prosperity, and "*trust in luck*" for remuneration.

Hives, by frequent misfortunes, are destitue of regality with its stimulating encouragements for its subjects, and central power, Hives which are thus queenless, often, if they have the eggs, repair their loss: but should a hive become in such a state, by changing a frame, containing eggs, from one hive to another (and introducing it into a warm place between the combs), we can remedy the loss by supplying them with eggs for their royal nursery, from which issues a queen, upon whom their affections concentrate. (See Fig. 3.)

The unsettled state of the swarm, their indisposition for labor, and other characteristic movements of a colony whose government has met with the extinction of royalty, are certain proofs of a queenless swarm. A swarm thus situated should be instantly supplied with eggs. If not furnished they will inevitably perish. The former spirit of industry will vanish. "Confusion worse confounded" permeates the entire realm. The hum of jealous activity is changed to the strange buzz of discontent, only to languish into inevitable death, or to associate with a neighboring swarm, whose hospitable and kind reception offers them aid to convey the stores to their newly found home.

By dividing a few stocks *ten* days before practicing artificial swarming, the bees will have an extra lot of queens sealed in their cells ready to supply other swarms. To do this, exchange the frames that contain the sealed queens for others in the queenless hive; or transfer them by cutting them out and carefully placing them in a situation as near as possible to that from which they have been subtracted, in a swarm which you desire to supply.

The excavation should be made with a small knife, and the piece of comb containing the queen-cell should be carefully inserted in a similar place cut in the comb in which you desire to insert it (see Fig. 2). If the queen-cell is slightly mutilated, there is suspicion that its inmate may be *injured*. There should be a space sufficiently large below the queen-cell, to permit her departure from the cell head foremost, or the bees may attack her and destroy her.

Whenever a swarm of bees are found to be queenless in the fall, after the drones are gone, the bee-manager must follow the directions which are found under "October management." Should he desire to "Italianize" his bees, it is now an excellent opportunity to introduce the "Italian Queen" to queenless stocks. It will be cheerfully accepted, and in process of time transmute the stock to that of the Italian breed.

Send for our circulars.

Surplus Honey.

When a large amount of box honey is desired, *one* artificial swarm should be made from two stock hives. This plan is strongly recommended, as an increase of stock to the amount of one-third annually. It has been proved by actual experiment to be the most successful way of insuring an increase, besides profitably managing an apiary. Sometimes when the season is a very favorable one, and the bee-keeper has had experience, a larger increase may be effected.

It is impossible to get both a large increase in swarms and a large amount of honey in the same season, without skill and experience in management. With an increase of one-third each year, commencing with only two swarms, you may *safely* increase them, so that in ten years a stock of fifty swarms may be obtained, together with a large amount of surplus honey. By this method many vexations attending a more rapid increase may be avoided. The above estimate is reliable.

To Hive Bees into a Movable-Comb Hive from the Bush.

Take off the cap and honey boxes, and shake the bees off on the top of the frames. Blow the breath powerfully on them, or sprinkle them slightly with water, and they will speedily go below. Now replace the boxes and cap, and the straggling bees may be shaken at the mouth of the hive and they will enter speedily. Should they enter reluctantly, disturb them with a feather and sprinkle them with water

very slightly. This will hurry them into the hive. Should the weather prove unfavorable for collecting honey for several days, a frame filled with comb and brood without bees, should be given them from another hive, or they should be fed until the weather will permit them to commence out-door operations. When a comb of honey and brood is given to them, they will not leave it and depart to the woods, because they are set to "housekeeping" at once in a home of their own. It is well to rub a little beeswax on the underside of the top of the frames, before you put the bees into the hive, as it is very acceptable to them, and sweetens the air of the hive.

Robbing.

When an attack is commenced, turn over the "Regulating Entrance" so that the bees can pass and repass singly. This checks operations, and robbing will cease at once. If this is not done, capture the robbers according to my "instructions" for putting disloyal bees to work in a hive by themselves.

Removing Surplus Honey.

When the honey is capped over in the boxes, it should be removed immediately, and other boxes furnished. They may be raised and a little smoke blown under them to make the bees retire, when they may be removed, or the "Bee Charm" may be used.

Transferring Bees.

This part of the management of bees should incite deep interest in the mind of the bee operator. It has temporal, because the preservation of bees enhances the quantity of the delicious products. It has a moral, because we are accountable for all acts destructive of present enjoyments, whether of appetite or mind. We cannot favor the idea that producers should be barbarously massacred, in order that the products should be enjoyed. There can be no justification for the act of destroying a colony of industrious insects by "fire and brimstone," when the in-

ventive genius of man has supplied methods by which a momentary subjugation suffices to obtain a supply of their products, which can be justly considered as a recompense for the fostering care bestowed on them. To do this successfully has been the desire of hundreds. It is gratifying to announce to the bee-keeper, that success has always attended the transfer of bees from the box and other hives to the Book Hive.

The best time is known to be either before the swarming season commences, or about twenty days after the first swarm issues.

They should not be transferred after the drones disappear as the queen might unfortunately be killed. In which case, though the bees rear another, there would be no drones to impregnate, the queens, and the stock would become extinct, unless a supply should be given. This is important and should be remembered.

Operation.

The old stock hive should be sprinkled with water to drive the bees all into the hive; after which gently remove the stock hive to a short distance under the shade of a tree or outhouse. Set it down bottom side up. Blow a little smoke upon them, to induce them to fill themselves with honey and remain quiet. Before commencing, it may be advisable to secure the face by a head-dress, unless you have the "Bee Charm."

Now return to the old stand and place an empty hive where the stock hive stood, to decoy the bees and keep them contented as they return from abroad. Put a box of the same size as the stock hive over this in such a way as to confine the bees and prevent them from escaping. Take two sticks and rap smartly on the sides of the hive, not too hard, lest the combs may be detached, until the bees have nearly all gone into the temporary attic above, which they will do in about twenty minutes.

Then lay down on the ground two sticks of wood so as to raise the hive about two inches from the ground, and set the box containing the bees upon them; sprinkle the box with water. We now have

the stock hive without the bees, the sides of which should be pried off by running a long-bladed knife, or a hand-saw, between the sides of the hive and the combs to disengage the sides. The combs can then be carefully removed, one by one. Lay them on a table and put a comb frame on them. Cut the combs to fit it and seal them closely into the frame with melted rosin, by pouring it around the inside of the frames and combs. The combs should be placed into the frames in the same manner that they were originally built (top side up), as the cells incline upward. The frames should be put into the new hive, which they are to occupy permanently, as fast as filled. The combs having been all transferred, shake the bees on the top of the combs and frames. Sprinkle them with water or blow them down, as directed in the chapter on "Hiving Swarms." After the bees are hived, the hive should be partially closed, as directed, to prevent robbing, and set on the old stand *exactly* where the stock originally stood, and in twenty-four hours the bees will have put the house in order. I may add that it will accommodate them to clear the bottom board for them two or three times.

The "drone cells" may be known by being very much enlarged. These should be thrown aside and rejected as only a few drones are necessary. There is consumed from three to five pounds of honey daily in some hives by the drones. This should satisfy any one of the advantages of destroying these "gentlemen loafers." An operation so often neglected yet highly important in a proper and remunerative management of these interesting insects.

Directions for Stocking the Apiary, with Rules for Purchasing Bees.

Select two year old stocks of large size, that swarmed the previous year. It has been demonstrated that such stocks have young and vigorous queens, and are generally well conditioned, promising a healthy generation. A very old stock should be rejected, even if it swarmed the year before and contained a yearling queen, for the obvious reason

that the bees having been bred in the old contracted cells, will be found of small size and insignificant in numbers. If you take your hive away to get a swarm placed into it, always purchase the first or prime swarm, *and see that it is given to you*. Do not be put off with a second or late swarm. Choose you a stock to commence with as you would choose a wife—"*get the best you can find.*" If you obtain one in the old box hive, invert it and secure the bees by a cloth tacked securely over the bottom. Take it home when the air is cool, attend to it regularly, obey the directions as given, and then congratulate yourself as having started right.

In the purchase of bees, there are many things it is well to observe. Remember if stock hives are to be procured, ascertain the age of the queen. To select a young healthful mother seems to be a forward step towards a vigorous progeny.

How the Ravages of the Moth can be Prevented.

It should be impressed on the minds of all who undertake the culture of bees, that great and profitable success depends on four indispensable conditions, viz: A good cultivator; a good season; a good bee-hive, and when these are obtained the fourth requisite is certain to follow, that is, "strong stocks," the Alpha and Omega in bee-keeping, without which all other conditions fail in giving success.

All bee-hives will contain the fruits of the moth-miller, more or less. If the bee-keeper strictly adheres to artificial swarming, and thereby keeps strong stocks, no serious trouble will ensue on account of the depredations of the moth. It is advisable to keep the bottom-board cleared of filth. With a Movable-Comb or Book Hive, if worms are contained, they are easily removed from time to time; because they are easily opened and re-adjusted. I do not find any trouble with moth in Italian stocks.

Taming Bees.

By skilfully operating upon the five senses of the bees, viz: seeing, hearing, touch, taste and smell, they

can be subjected to the control and will of the bee-master. An entire swarm can be tamed in two minutes, so that they can be handled fearless of their defensive weapon.

Reason teaches us that they should be carefully handled, avoiding all jostling or pressure. Man himself, when abused or roughly handled, is not free from a feeling of resistance, or quick defense. Why should bees then, armed defensively by nature, not retort when under a sense of pain or restriction, caused by any attack on themselves or their possessions?

One rule bears thoughtfulness. *Never manifest fear while operating with them.* Whatever is attempted let no cowardice be witnessed by the bees. Avoid all offensive motions of the body, such as striking, or attempt to disperse those surrounding your person. You may imagine that their intention when they swarm around you is to sting you, when really they do not.

By no means let a "panic" seize you and a retreat be sounded. Let their buzzing arm your confidence, stand firm; they will not sting until the "buzz" is reduced to a finer note, when, by looking steadily on the ground with head bowed down, or putting your face in shrubbery, they will soon leave you. But should you decide on a hasty retreat, let it be done only as a "military necessity." Change your "base" quickly, and fall back silently, that the attacking party may be ignorant of your designs. In case the bee-keeper should excite his bees, and they become cross and ungovernable, it is then advisable for him as a precautionary measure to make use of a bee protector or head-dress. The best preventive of an attack is the "Bee Charm," which will be forwarded by mail, post paid, for fifty cents per box, with instructions for preparing it.

W. A. Flanders' Bee Charm.

This is composed of the extract of the Queen Bee, anise, fenugreek and other vegetable productions, which, if used according to directions, will quiet the irate disposition of the most angry swarm, so that

they can be handled regardless of their animosity, and fearless of stings. It has a remarkable persuasive influence over the bee. It at once lulls them into a quiescent state, without physical injury to them in any way, and renders the bee-keeper a tamer of the ferocity of these insects with a speed and security beyond that boasted of by the renowned Van Amburgh among the savage animals of the forest. While his but illustrates the sole dominion of man over the mighty beasts of the forest, without any fruits beyond the admiring applause of an excited and breathless throng; this holds these insects under a captivating influence in order to yield the luxury of luxuries for man's delicious enjoyment It is the apiarian's power; his magic wand; his pride. He dismisses, with a conscious pleasure the barbarous code of the past, by which colony after colony suffered total extirpation, and congratulates himself that now he accumulates the regal wealth of an insect tribe with a conquest not of barbarity and devastation, but with one accompanied by the pleasurable emotions of love and pure enthusiasm.

To Use the Bee Charm.

The bee keeper should rub three or four drops on the fingers, lips and face. Then blow his breath on the swarm, strongly and constantly, as long as he can for three or four times, at such a distance as will ensure a cool breath. This will greet them and suddenly "charm" them so effectively that they will not show any hostility towards the operator. It will affect them less when they are raising young queens than at any other times.

I have repeatedly offered one hundred dollars, while in attendance at different State and County fairs, to any person who would furnish a stock so incensed and irritable, that I could not put its bees in my mouth in three minutes after they have been in my possession. I have invariably been successful in lulling their angry passions and bringing them under my control. Although bee keepers, who have at first been skeptical and desirous of trial, have brought to me many exceedingly ill disposed stocks, I have uni-

versally satisfied them of the magnetizing properties of this wonderful charm.

I have, to satisfy a crowd, repeatedly shaken a swarm on its heads without a sting being inflicted, or fear apprehended.

Feeding Bees.

Bees should be so reared as to yield the apiarian a supply of their luxurious stores, rather than demand a supply from him. We, however, admit that advantages are often derived from feeding bees. Many stocks sometimes perish for the want of sufficient food to keep them alive for a few days. This is a material loss and disadvantage to their owner. At other times, if they are fed a little, it greatly forwards the brood; and it is often discovered that stocks fed in the early part of spring generally increase more in one week in numbers, than they would do in two weeks where no feed is allowed

They should be in such a condition in September as to allow them to winter safely without feeding. They should weigh in my hives, twenty-five pounds above the weight of the hive, on the first of October for safe wintering on their own collection of stores. If they fall below that weight in September, they should be joined or united with other stocks similarly provided with honey, or be judiciously fed in September, until they do contain twenty-five pounds net, which, together with the weight of the hive, will average seventy-five pounds.

All hives and fixtures for the reception of bees and honey, should be weighed and the weight indelibly marked, with weight before bees are put into it. This is important. It not only confirms the bee-keeper in his systematic management, but it is actually requisite in order to judge of the weight of stocks, and ascertain if feeding be required.

Feeding unbolted rye or buckwheat flour, in the *early* part of spring, is a good preventive against "robbing."

Honey is the best "bee-feed," and with my Book Hive, a stock of bees can be kept alive through the winter on two-thirds of the honey it would require

to keep the same in the box hives. The reason is plain. The honey can be equally distributed to all the stock. If any of the stock wants more at any time during the winter, on fair days "rob Peter to pay Paul," by changing combs from strong stocks to the weaker ones, and by thus equalizing the stores the advantages of preservation of such stocks by the Movable-Comb Hive which can not be secured in the Box Hive.

Ventilating Bees.

For healthful ventilation, air should be supplied to the Hive, in a sufficient quantity to keep the Hive dry and sweet inside.

For winter ventilation, the air should be admitted through the top of the hive, and on the outside of the comb frames only, so that the air will commingle with the rarified air within, and thus equalize the temperature of the Hive. The old method of ventilating a hive at the bottom is the worst that can be adopted. Air is as necessary to the bee as to man. Their existence depends on its supply. Our Book Hive is ventilated perfectly. (See "General Remarks," page 17.)

To Keep Bees in a Hive from Year to Year Without Running Out.

This is accomplished by swarming bees artificially, that is by dividing them with the aid of my "Book Hive," whereby one-half of the comb is renewed annually. It is necessary every fourth year to remove the old comb, instead of dividing the swarm, while the bees are allowed to remain in the hive and refill it. This is easily done by lifting off the side containing the old comb, and shaking the bees into the other part. One comb at a time is all that is necessary to be removed, after which they may be returned. The bees will continue in a healthy and active condition for years. It has been recommended to destroy all

the old queens, that are three years old and upward. But how are we to arrive at her age? It could only be done by marking the queens, making a registration of royal births, or cutting off one wing each year. The latter savors of the Jewish royal edict of Herod, that all children under two years, in Bethlehem, should be slain. With the majority of bee keepers it would not be effectual. It cannot be commended for practice. We insist that by renewing the combs once in four years, and dividing the stock hive as detailed above, is the only rational method to preserve bees in a prosperous condition for an indefinite time, and prevent their "running out."

Order Italian Queens.

We offer Italian Queens *very low*, at "club rates," to enable persons who have large apiaries to Italianize them at once. By getting up a club for a few in a neighborhood, the express charges or postage on the queens will be less. We send queens by mail anywhere. Send for our FREE circulars in February in each year, for yourself and friends. Send orders to

W. A. FLANDERS & CO.,
Shelby, Ohio.

MRS. TUPPER'S LETTER.—In the spring of 1866 we sent one of our "Book Hives" to Mrs. E. S. Tupper, of Iowa, for trial, and on the 29th of June, 1866, she wrote us as follows: "The bees in your hive have filled it, also two of the boxes. The hive is much admired, and opens with *perfect ease;* all the combs *straight and nice.* I am preparing an article on "hives" for our county paper, which I will send you.

In great haste,

E. S. TUPPER.

General Management of Bees.

JANUARY MANAGEMENT.

While there is little else to do with the bees, the bee keepers should study the habits and characteristics of the bees, as given in this manual, or other authors. Build hives for the following spring. Send

orders to my address, in season, for Hives, Books, Bee Charm, Circulars, etc. My motto is, "first come, first served."

February Management.

Look well to your bees during this month, and see that they have a sufficiency of food. Should there be a want of honey, through inattention during September, attend to them as directed in the chapter on "Feeding." One thing the bee keeper should understand—"Proper and judicious bee culture forbids feeding in cold weather." A word to the wise is sufficient. Send for our circulars.

March Management.

Look to the bees with the same scrutiny as in February. See that your hives are finished for the ensuing year. If the climate and weather permit, put your bees out of doors. Take care that they have honey.

April Management.

Should your bees yet remain in winter quarters, this is the month that they should be set out in the summer residence. The willow now will afford them labor, from which they collect their "bee bread." A few stocks should only be set out at one time, as they be required to settle into their right hives. Those that are deficient in "bee bread," can be supplied with a composition of the yolks of eggs (hard boiled) and unbolted rye or buckwheat flower, mixed with a little honey. This is an excellent preparation for bees in spring. It infuses vigor and strength into the queen, and causes her to lay rapidly. All communications above the hives should now be closed, to assist early breeding and keep the bees out of the caps.

May Management.

The flowers and fruit trees now put forth their blossoms, redolent with the sweet scents of honey and perfume. The busy bee enjoys the rich harvest with its diurnal toils. The bee keeper should be no

less assiduous in his attentions to these faithful laborers. Then look to your bees; see that they are in good condition—in good working trim.

About the twentieth is an excellent time to divide a few of your strongest stocks, in order that your queenless hives will have ten days to construct the royal cells. These you will need to supply your stocks created artificially, and which are queenless, a week before natural swarms issue. Study the chapter on "Artificial Swarming," and follow the text closely. About the last of the month, if the season is favorable, artificial swarming may commence, provided the drones are numerous, and the weather has become from its cold and chilly nature to warm, abounding in thunder storms. (See "Artificial Swarming.") Send the names of bee keepers to us.

June Management.

Surplus boxes should be supplied to all hives this month. This may be considered the swarming month. Place small pieces of comb into your surplus honey boxes to start the bees *Visit them often,* and when natural swarming is allowed, watch them closely. About the time secession is at its height, and swarm after swarm escapes to the woods, amid the din and confusion of beating pans and kettles, the value of the Book Hive seems priceless. No less valuable are the "instructions" for returning fugitive swarms.

When swarms issue, proceed as directed in the chapters on "Natural Swarming" and "Preventing Overswarming." Remove all honey boxes and replace them with empty ones. Use a little smoke to quiet the bees during the exchange of boxes. Order Italian queens now.

July Management.

The directions for this month are like those of June. Remove the honey boxes when full. Study September management.

August Management.

Be untiring in attention. Watch the moth and robbers—two enemies of success. Thus, by care and

watchfulness, the apiarian has an interesting and highly remunerative employment; without them, loss and vexatious disappointment.

September Management in a Movable-Comb Hive.

During this month the surplus honey should be removed and the stocks thoroughly examined, to see that they all have queens. The hives may be opened, and if no eggs or brood is seen, the owner should mark it "Queenless." Thus designated, it will be ready for union with another swarm in October, or to Italianize at once.

Should there be a deficiency of honey (twenty-five pounds above the weight of the hive), supply them with food, in order that they may fully come up to that weight. If any young swarms are deficient of "bread," change a comb or two with an old stock that has an excess. (See "Feeding Bees.")

N. B.—Always brush the bees back into the original hive, for the safety of the queen.

September and October Management with Common Hives.

This is the season that the unfeeling bee keeper resorts to the "Brimstone Practice," and confiscates the honey to apply it to his own use, in payment for his self-supposed generosity in furnishing his bees with a supper, with *sulphur* for dessert.

October Management.

Close the hive so as to prevent "robbers" from gaining admittance, allowing only a passage for the bees to pass singly into the hive. It is now the proper time to unite swarms, that will not winter, with other stocks. Open the poorest hive and look the comb over until you see the queen; catch her (she never stings) with the fingers, and put her in a queen cage, as you may want her to place in your hives marked "Queenless" in September. (See remarks on our "queen cages," page 49, "Introducing Queens") Then join this hive with another, after smoking them,

unless your bees are in the Book Hive; in which case you will unite them by changing the halves of each hive, according to the directions given in another place. (See uniting swarms, under Natural Swarming and Hiving Bees.)

NOVEMBER MANAGEMENT WITH BOX HIVES.

Put them into "winter quarters" (if in New England.)—A *dry, dark, cool* place is best. Invert and set them on blocks, bottom side upward. Cover them over with a thin cloth. Look after them once in a while during the winter. Place them out in April. With the Book Hives, see that they remain without robbing, is sufficient.

DECEMBER MANAGEMENT WITH MOVABLE-COMB HIVE.

If the weather is cold, the bees can be protected by turning a dry goods box, or something of a similar construction, over the hives. If you have a cellar that is *dry, dark* and *cool*, put them into it on joists laid on the cellar floor, that raises them from the ground. (See Method of Ventilating, also Improved Method of Wintering Bees.)

Wintering Bees—Improved Method.

Great diversity of opinion has always prevailed among practical apiarians, in relation to the protection of bees during the inclemency, frosts and changeableness of the winter season. Many practice burying them in the ground; some carry them into outhouses, cellars and other protected localities; others leave them remain on the summer stand, risking their welfare and perpetuity to Providence or the care of nature. All these have serious objections. They not unfrequently induce disease, mouldiness of comb, or incidents fraught with damage and perhaps total extinction. To leave them remain on their stands, they are subject to the fickle character of the weather. One day the air is balmy, inviting an outdoor visit; the next, piercing cold, causes a closer nestling for warmth, while the stiffened limbs soon unnerves the

bee, and hurries certain death. The rapid changes from warm to cold have their consumptive forebodings, and the bee tribe is no less subject to the ill-effects of changes than man. To obviate the risks ran by these common methods, with their collateral damages, I have invented an improved bee wintering plan. It at once overcomes all the objections to the various plans of general usage, and secures the following happy results: First, it furnishes an equal and uniform temperature during the season; second, the bees are kept dormant, in a *cool, dry, and perfectly dark situation*, so safely that hives need not be closed at all.

This "winter apiary" is built with straw, tightly compressed into walls, having an inside and an outside wall, between which tan-bark and planing shavings or saw-dust may be packed. The general construction is as follows: Select a dry place as convenient to visit as possible, near to the dwelling, away from stock, shed or yard, &c. Prepare a foundation of the requisite width and length for your hives. Where a large number has to be housed, eight feet is the best width, as that distance will allow the hives to be placed on each side, and admit an aisle between the rows of hives. Joists should be laid on the ground and well ballasted with earth. A floor is then laid, and a two-inch plank should be fitted around the outside, on the top of the joists, under the walls of the house; these serve as sills. They should be a foot in width. Draw a line two and one-half inches from each edge, on this plank, and another line on the middle of the plank. Bore a hole six inches from the end of the plank, and about two inches in diameter. Let it go through the plank and sill. Continue to bore similar holes at a foot distant around the building, on each line drawn; thus three rows of auger holes will be made. "Uprights" may be taken from the woods if studding cannot be conveniently obtained, (I prefer the former.) These posts or uprights should be three inches in diameter, and perfectly straight. For the back part of the building, the posts should be about six feet in height, the front and ends about seven and a half to eight feet, ranging the end posts so as to give the roof a

suitable "pitch" when complete. These uprights are driven into the auger holes; we then have two frames complete, ready for the filling of straw. This is laid between the uprights, in a horizontal position, and broken "round the corners." Beat it down well as each course is laid, so as to secure solidity. As the filling of straw progresses, the space between the walls is filled with any suitable material. At equal distances of three feet, withes are woven in between the upright posts, to bind the structure together. A straight edge may be used on the upright posts, back and front, at the ends, in order to mark the proper pitch of roof. Having completed the walls, a cord or wire should tie the upright posts at the top. Make a "clamped roof," of straw for the top, then let shingles or boards complete the roof. A door should be put into one end. A thin partition of straw should first be made across the room, about four feet within the outside door. In this partition insert a door, then complete your building by an outside door. It needs no window, as it is a primary object to secure perfect darkness.

This architecture of straw, poles, &c., forms a secure habitation for bees, against the fickle blasts of winter. The expense is altogether a trifle; the materials can be found on any farm; while at moments when released from the labor of the farm, it can be erected. You can visit them frequently. Be careful when entering to close the outside door before opening the inner one, and let no sunlight enter the interior. The passage between the doors has claims for its usefulness. In the spring, when bees are to be changed to the summer stand, one or two hives can be placed in this vestibule, with the outer door closed, and after closing the inner door, their removal will not permit the sunlight to enter.

The preparation of the winter hives is as follows: If a Movable-Comb or Book Hive, open it, and with a small knife cut an inch hole through each comb. Bend a piece of sand paper around the forefinger, and slip the sand paper into the hole to remain. This secures a winter passage through all the combs, and enables the bees to obtain feed at all times. The

holes should be cut about two-thirds the height from the bottom, and near the centre.

The hives being prepared for "winter quarters," should be removed to them, at the time that permanent cold weather arrives. Set them on benches two feet in height. (See "Ventilating" for instructions on that subject.)

It would be advisable to construct the apiary about eight inches wider at the top than bottom, to prevent the snow and rain from lodging on it. The walls should be well braced on the inside, by strips, to prevent the wind from dislodging it.

I never have had a stock of bees die in winter, properly housed in an apiary of this construction, and well regarded for in the passages and ventilation. Persons adopting this plan will use no other.

Parties purchasing my hives, &c., will have the right to construct the "Straw Apiary," as above. *Any infringement will not be allowed.*

When only a hive or two are kept, "caps" or "clamps" may be made to cover single hives. They are of little expense, and are easily hoisted off when an examination is desirable.

Dzierzon Theory.

The following propositions (which were published for the first time in English by the "American Bee Journal,") embraces, substantially, the entire Dzeirzon Theory. "They are, as far as they contain or propound anything novel, deducted from the personal observations and experiments of that celebrated Apiarian." Having demonstrated the truthfulness of this theory in all its practical bearings upon bee culture, I am satisfied that the culture of the honey bee cannot be conducted with the judgment and skill requisite to justify an expectation of successful results without an accurate and familiar acquaintance with this theory. "The practical operations must be based upon the theory, which hence becomes a proper subject for study." The theory is embraced in the following propositions:

First. A colony of bees in its normal condition consists of three characteristically different kinds of

individuals—the queen, workers, and (at certain periods,) the drones.

SECOND. In the normal condition of a colony, the queen is the only perfect female present in the hive, and lays all the eggs found therein. These eggs are male and female. From the former proceed the drones; from the latter, if laid in narrow cells, proceed the workers or undeveloped females; and from them, also, if laid or removed into wider, acorn-shaped and vertically suspended, so-called royal cells, lavishly supplied with a peculiar pabulum or jelly, proceed the queens.

THIRD. The queen possesses the ability to lay male or female eggs at pleasure, as the particular cell she is at any time supplying may require.

FOURTH. In order to become qualified to lay *both* male and female eggs, the queen must be fecundated by a drone or male bee.

FIFTH. The fecundation of the queen is always effected outside of the hive, in the open air, and while on the wing. Consequently, in order to become *fully* fertile, that is, capable of laying *both* male and female eggs, the queen must leave her hive at least once.

SIXTH. In the act of copulation the genitalia of the drone enters the valva of the queen, and the drone simultaneously perishes.

SEVENTH. The fecundation of the queen, once accomplished, is efficacious during her life, or so long as she remains healthy and vigorous; and she never afterwards leaves the hive, except when issuing with a swarm.

EIGHTH. The ovary of the queen is not impregnated in copulation; but a small visicle or sac situated near the termination of the oviduct, and communicating therewith, becomes charged with the semen of the drone.

NINTH. All eggs germinated in the ovary of the queen tend to develop as males and do develop as such, unless impregnated by the male sperm while passing the mouth of the seminal sac or spermatheca, when descending to the oviduct. If they be thus impregnated in the downward passage (which impregnation the queen can effect or omit at pleasure) they develop a female.

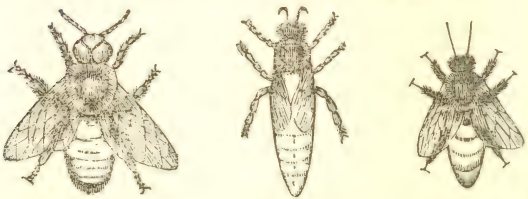
TENTH. If a queen remains unfecundated, she ordinarily does not lay eggs. Still, exceptional cases do sometimes occur, and the eggs then laid produce drones only. (She is called a drone layer.)

ELEVENTH. If, in consequence of superannuation, the contents of the spermatheca of a fecundated queen become exhausted; or if, from enervation or accident she lose the power of using the muscles connected with the spermatheca so as to be unable to impregnate the passing egg, she will thenceforward lay drone eggs only.

TWELFTH. As some unfecundated queens occasionally lay drone eggs, so also in queenless colonies, no longer having the requisite means of rearing a queen, common workers are sometimes found, that lay eggs from which drones and drones only, proceed. These workers are likewise unfecundated; and the eggs are uniformly laid by some individual bee, regarded more or less by her companions as their queen.

THIRTEENTH. So long as a fertile queen is present in the hive, the bees do not tolerate a fertile worker. Nor do they tolerate one while cherishing a hope of being able to rear a queen. In rare instances, however, exceptional cases occur. Fertile workers are sometimes found in hives *immediately* after the death of the queen; and even in the presence of a young queen, *so long as she has not herself become fertile.*"

Ligurian or Golden Bee, from Italy.



DRONE. QUEEN. WORKER.

Our Italian Bees.

KELLEY'S ISLAND ITALIAN BEE APIARY, AND BEE-KEEPERS' INSTITUTE, ON KELLEY'S ISLAND, OHIO: ESTABLISHED A.D. 1866, BY W. A. FLANDERS, & CO.

In offering our circular for this season we tender our thanks to the public for a liberal patronage the past year, and hope by strict attention to the wants of our patrons to merit a continuance of the same. Our object in selecting this beautiful Island, was to isolate our Italian bees by removing them away from the native bees, that we might secure *absolute certainty* in furnishing pure bred stock to bee-keepers at *reasonable rates*. This we have accomplished, as there were no bees on the Island until we brought ours here, and it is several miles across the water to any place where the native bees are kept. We employ the best cultivators, who are capable to teach the science and art of theoretical and practical bee-culture.

Kelley's Island (so celebrated for grapes and wine) is about twelve miles from Sandusky City, Erie county, Ohio, on Lake Erie. It is one of the most beautiful places for "SUMMER RESORT" found on the lakes. Steamboats, carrying the mail and express, run between the Island and Sandusky City daily. In size, the island is about equal to an ordinary township—ten square miles: It is thickly inhabited and healthy—society all that can be desired.

We guarantee satisfaction to our patrons, or make no charge for instruction.

Our charge is $25 per term, of five weeks, which will give you a good understanding of our system, as well as the general principles of bee-culture.

OUR ITALIAN BEES.

The above are correct representations of our late importation of Italian bees. The golden color on the bees is represented by the light color in the cuts. They are remarkably delicate and slender in form, with colors *clear* and *bright*—markings very distinct. They were procured from Mr. Antonis Franchi, near Ligo di Como, in Italy, where they are exclusively kept and cultivated in all their purity. Our Mr. Flanders having been appointed by the American

Bee-Keeper's Association, (held in March, 1860, in Cleveland, Ohio,) as one of a committee to receive and cultivate the Italians for that Association; and having the S. B. Parsons and Wm Rose, and late Langstroth importation, we flatter ourselves that we are able to detect any impurity wherever it exists. Thus, by care and watchfulness in selecting the most valuable "QUEEN MOTHERS," we expect to keep up and improve this noble race of bees. And having established our "KELLEY'S ISLAND APIARY," every queen that we rear will be *pure* and impregnated by the pure Italian drone. And as one impregnation lasts during the life of the queen, the purchaser can *rely* upon having a *pure queen* to rear others from while she survives - three or four years. By removing the native queen from a hive and giving them the *Italian queen* in a *short time the whole stock will be pure Italians.* From the reports of the agricultural papers in this country and in Europe, as well as from letters from our numerous correspondents and patrons in the United States during the six years we have cultivated the Italians, we are fully convinced that they sustain their high European reputation over our native bees.

We have arrangments with reliable breeders in Italy and Europe, to send us choice queens each season, so that we may be able to avoid too close (in-and-in) breeding. Our late importation from Antonis Franchi, we believe, is not excelled by any bees in any country.

Test of Purity for Italian Bees.

We find the test of purity which "The American Bee Journal" announced last September, the most sensible and reliable. It is based upon the test of Count Stosch, and is as follows: "That a queen may be regarded as pure, and purely fertilized when young queens reared from her worker brood and fertilized by her drones, produce workers who have three golden bands passing around the body." By the above it will be noticed that the markings of the workers are the only reliable test of purity in the race, since there is nothing reliable in the markings and deportment of the queens or drones to indicate

the standard of *purity*. Queens and drones from the same mother, vary greatly in color; the best being reared while the workers are collecting honey abundantly, and from strong colonies, in June and July.

Rearing Queens.

This is done by placing a stock or small hive in a queenless condition. The requisites are young bees for nurses; eggs in worker-cells, of not more than four days old, with the necessary supply of feed and combs. By removing a queen from an Italian stock the bees will generally start from a half dozen to a dozen cells, which will be perfected in ten days after the queen was taken from them. On the tenth day these cells may be removed to other hives (made queenless six hours previous), to hatch out there; or they may be protected in their original position, and after they hatch, they can be introduced to full stocks or nucleus boxes. By rearing a set of queens for *each* of your swarms from the Italian queen we send you, the *first season*, and the next season another set from the queen we send you to replace those you reared the first season, you will Italize your whole apiary. The *modus operandi* is as follows: The first lot of queens you rear will produce hybrids, as the young queens will be fertilized by your native drones, but the next season these hybridized queens will produce pure drones, which will fertilize your second year's brood of queens. Occasionally a queen will meet a drone from a neighbor's hive and produce hybrids. Such queens may be replaced. Parties who expect to practice queen-raising extensively, should attend our "Institute." (See Dzierzon's Theory.)

Introducing Queens.

Our improved "Queen Cage" will be sent with each queen, the queen being safely protected in it from injury on the route. The black queen must be removed and the stock examined for "queen-cells" (if in the swarming season) Destroy *all* such cells, and let the stock remain quiet for about eight days, and then examine it again, and *cut away* or destroy

every queen-cell started, and take off the little cap from the artificial queen-cell at the bottom of the cage we send the queen to you in, and touch the point of the cell in a little melted beeswax, so as to form a thin cap over the end of it. When the "wax cap" is cooled, stick a pin through the wax so as to allow the queen to put her bill through it to notify the bees of her desire to escape, and place the cage between the ranges of combs, taking care that no obstruction is near the bottom of the artificial cell to prevent the queen's exit. As all the queens we ship are confined when received (with the exception of putting in the back slide), the introduction is easily done, and the queens can be kept safely in our improved "shipping cage," in a moderately warm place (in *darkness*), until her introduction, and fed as easily as a canary bird, without removing her from the cage, as she goes down through the artificial cell in the cage and feeds from a reservoir of liquid honey the same as when on the route. When she is received she *must be kept from the sunlight*, and the reservoir taken off and some honey put into it (about a teaspoonful); after which the reservoir is to be put on the cell again, and the caged queen put into the stock that the black queen was removed from to remain until the swarm is in the proper condition for her introduction. We will NOTIFY our patrons SOME TEN DAYS, before we ship queens, of the day we will ship them, in order to have the swarms prepared for them. A stock cannot be expected to be reared from the few bees we ship with each queen. (See Shipping Queens by Mail.)

When we notify you of the shipment of your queens, all instructions will be sent you not explained here.

In concluding this article we will give Mrs. E. S. Tupper's experience with the Italians. She is a practical bee-keeper, and is in every way worty of full credit for her statements. It is what may be expected from the Italians in any good locality, with proper management:

Mrs Tupper's Experience with the Italians.

"In the summer of 1863 I had but two stands of

the Italian bees, and those not pure. One of these stored 110 pounds of honey, besides giving three swarms. The other gave two swarms and stored 96 pounds of honey; all the young swarms filled their hives, and some of them stored honey in the boxes. I had, the same season, fifty-six hives of the common bees, but not one of these stored a pound of surplus honey, though a part of them were divided. That was the poorest honey season ever known in this section.

"In the summer of 1865 I averaged from nine Italian colonies 118 pounds each. The best of these shows the following record in my journal: One full swarm taken from it the 20th of May; 156 pounds of honey taken in boxes; stored by the swarm, 80 pounds; from the swarm there came a swarm (August 15th) which filled its hive and partly filled two boxes. Thus we have 236 pounds of honey, besides two large swarms, from a single hive! The same summer I had thirty stands of common bees, which I prevented from swarming, yet with no increase; from them I obtained only 1,655 pounds of honey, or an average of about 56 pounds to each. The largest yield from either was 96 pounds.

"In 1865 I had an average of 93 pounds from six Italian colonies, all of which were divided once and much desturbed by taking brood from them to rear queens. During the same time I did not take a pound of honey from any colony of common bees, though I divided them all, and gave each an Italian queen. Not only do they store more honey, but their queens are much more prolific than the black queens.

"It is wonderful how much brood may be taken from one of these queens. From one hive the last season I took thirty-two frames of brood and eggs at different times from which to rear queens, and from another thirty-six frames, yet both hives were as strong in the fall as any of the common ones from which only one swarm had been taken. As ten frames fill one of my hives, it will be seen that this was equal to three full swarms from one and more than three and a half from the other."

The following letters show whether our queens meet the expectations of the best breeders in this

country, or whether we fill orders with queens as "*highly colored*" *as our cuts indicate:*

BRIGHTON, July 25, 1866.

W. A. Flanders—Dear Sir: Your queens are received all right. They look just like all that I rear this year. I shall send you *two* next Monday (30th). They are of the Colvin stock. I have nothing that I succeed half as well in rearing light, bright queens from. I am disappointed in the queens received from Langstroth and Quinby last season. Neither of them produce *good* light queens. That is, full one-half are dark, and, *occasionally*, I have from them a *black* queen. I do not think it safe to propagate from such queens. I have few orders for queens as yet Many are rearing and selling hybrid queens at three and five dollars each. I sell none that I have not fully tested and can *warrant*. In time I shall have orders at my own price, and then I will send to you.

Yours truly,
ELLEN S. TUPPER.

The queens which Mrs. Tupper refers to were received by us in due time, *all right*, and prove to be fully up to her recommendation; and on the 20th of August, 1866, we received a letter from Mrs. Tupper, from which we extract the following:

"I have already reared several queens from one of the queens you sent me, which are *duplicates* of herself, and if they meet Colvin drones I shall be satisfied. Truly, E. S. TUPPER."

ST. CHARLES, July 20, 1867.

Messrs. W. A. Flanders & Co.:

I have 240 stocks of bees, 60 young Italian queens, and 7 old ones of Langstroth's stock. I wish to procure queens of you, if you can let me have one or more as well marked, and that will produce queens as *highly colored* as the cuts of yours in the "American Bee Gazette." If you can fill my order as above, reply by return mail.

JAMES M. MARVIN.

We sent Mr. Marvin some queens, and he ordered a second lot, after which he wrote us as follows:

ST. CHARLES, Sept. 12, 1866.

Messrs. W. A. Flanders & Co.:

I have been waiting until I tested the first queens I purchased of you, before acknowledging the receipt of the last. I think I can produce *clear yellow queens* (and *workers* the color the queens are). I have seen eight or ten, and they are *all well colored.*

Yours truly,
JAMES M. MARVIN.

CHILLICOTHE, MO., Nov. 4, 1866.

W. A. Flanders & Co.:

GENTLEMEN:—The six Italian queens you shipped me arrived in *fine* condition. I am well pleased with them. They are as *handsome* queens as any I ever saw. I introduced them to native stocks as soon as they arrived. I am satisfied they are the finest queens in North Missouri. It is indeed a lively sight, of a warm day, to witness their golden progeny as they sally forth in the sunlight.

Success to your enterprise.

ROBERT L. SEAY.

Last season, after we had finished shipping queens, we received many letters and orders that we *could not fill.* The following is a sample of those who were disappointed. (Give us your orders EARLY, and we will fill them at *fair rates*):

MT. LEBANON, COLUMBIA CO., N. Y.,
September 4th, 1866.

W. A. Flanders:

TRULY RESPECTED FRIEND:—Of course I have to kindly acknowledge the receipt of your circular. Please accept thanks. I regret, however, you cannot furnish any more queens this fall. I regret, also, that you contemplate raising the price of your queens, not because *I* am not willing to pay a good price for

a queen, as I have spent already $200 on queens, and raised many for the market, but it is my opinion *your* firm will make more money *not* to raise the price on your queens than to raise it. I much admire your advantageous location.

Respectfully,
GILES B. AVERY.

MAHOMET, Oct. 8th, 1866.

Messrs. W. A. Flanders & Co.:

We wish to inquire whether you can ship us any more Italian queens this fall. Those we received from you are *splendid* bees, and we would like a few more of the same kind, if we could get them this fall.

Very respectfully,
CHERRY & TUCKER.

To Capture Wild Bees without Cutting the Tree or Finding It.

Take an empty hive and bore a five-eighths inch hole through its side, and introduce a tin tube which fills the hole, and long enough to reach into the centre of the hive. Now drop three or four drops of W. A. Flanders' "Bee Charm" into the hive. (This Charm is compounded and prepared from the extract of queen bees, fenugreek and anise. Price 50 cents per box. Sent by mail, post-paid.) Then bore an inch hole opposite the tube's end, so that when the tube is covered with glass the light will shine through this tube.

Now take a box with a hinged cover (smaller than the hive) with one side wanting, and bore a five-eighths inch hole into this box, and place the open side of it to the hive's side, where the tube is put into the hive. Now lift the cover to this box and set into it a plate of sugar water—honey is better. The box should fit the hive's side so as to exclude the light, &c., having another tube like the one in the hive, with a curtain over the end, so fixed as to exclude the light but admit the bees, &c. The hive is to be closed and ventilated. A piece of brood comb can be put into it before the bees are introduced, for

the captured bees to raise a queen, or a queen may be given them afterward.

OPERATION.

Being near where we suppose the tree is situated, we catch a bee (from a flower) in the curtained tube, and run it into the feed box, through the hole, and after the bee has had time to fill itself, withdraw the tube. The bee will soon go home loaded, and return with its companions for more feed. In a short time the whole swarm will be at work carrying off the feed. Now put the tube through the hole in the box and let it remain. The bees go through the tube as they did the hole before the tube was put into it, and as the curtain over its end prevents the light from shining into the feed box, and as the light shines through the glass and tube in the hive, into the feed box, the bees pass into the hive and hive themselves of course.

Now if you suspect they belong to your neighbor's hives, you can easily satisfy yourself by carrying the hive near by, and if a few bees, which you will let out, pass to your neighbor's hives and enter, you will let the swarm go, of course, to the hives. You can try them at your hives, and ascertain if they are your bees, and if they are, operate as you like. Confine them four days with brood comb or queen, and give them water and feed, and they will go to work, when let out in the evening of the fourth day, even if they were "disloyal robbers" belonging to several hives of your own, and they remain.

THE PRESS.

Bee-Keepers' Institute on Kelley's Island.—We always hail with joy any new advance in apiarian science, and so we gladly make mention of the advent of an institution in which may be learned the art and science of bee-culture. If it is to be conducted as it ought to be conducted, and as we doubt not it will be, it cannot help attaining popularity and favor. Such an institution ought to be a national institution, and enlist all the interest and sym-

pathy of the American aparian. Bee-keeping is too little understood by those of our land who are most favorably situated for its profitable pursuit. In Europe such institutions are carried on with success, and receive a large support from national treasuries, and this ought to be supported. Mr. Flanders' knowledge of bee-culture, and his success in managing bees, makes him eminently fitted to instruct and encourage the amateur. We do not advocate such an institution, either, because Mr. Flanders is at its head. If any other aparian had taken the reins we should speak as plainly and as warmly. Such an institution will not pay at once, and so Mr. F. wisely combines it with his own api-nursery of pure Italian queens, for the profitable raising of which he seems most fortunately situated. Such an institution as that founded by Mr. F. ought to be in connection with every State agricultural college in the Union, with a good-sized apiary, which, with a practical apiarian professor at its head, would do much toward maintaining its own support, besides instructing such young men in bee-keeing as may be preparing themselves for an intelligent and practical pursuit of agriculture. Such state agricultural colleges as have been so lately endowed by national munificence in the gift of land-scrip, will do well in forming their facilities for instruction, not to neglect so important a branch of domestic industry as bee-keeping, and give it a most prominent place.—*American Bee Gazette* (August, 1866).

Kelley's Island Italian Bee Apiary and Bee-Keepers' Institute.

We have received from Mr. W. A. Flanders, the inspiring and presiding genius of the above institutions, an illustrated circular giving a full account of the operations carried on under his supervition. In the first place, an apiary has been established on Kelley's Island, for the special purpose of raising pure Italian queens and stocks. There were no native bees on the island prior to Mr. Flanders taking up his abode on it, and as it is several miles distant from the main land there is no possibility of

intermixture with common bees. The price list offers Italian queens at from $5 to $20 each, according to age, time they are sent, and the number ordered. Mr. Flanders' address is at Shelby, Ohio.—*Canada Farmer.*

It is not in our province to puff resurrection pills nor the patent nostrums and humbugs of the day, but when we become acquainted with anything calculated to promote the good of the public or of individuals we feel called upon to give it a passing notice. W. A. Flanders' Bee Hive is the result of much study and labor on the part of the inventor. He having labored for a long time under a physical debility which disqualified him from his usual vocation, he turned his attention more particularly to the cultivation of bees, of the habits of which, by the aid of books and careful observation, he has obtained a thorough knowledge. We think his hive the best in use, having used it, as well as many others.—*Vermont Christian Messenger.*

From the Cleveland Review.

Traveling Bees.—A swarm of bees belonging to W. W. Richards, of Solon, in one of the newly patented hives of W. A. Flanders, of Shelby, was taken in September by the railroad to Cleveland, and on the 11th of September sent by express to Cincinnati, to the United States Fair, where it took the first premium, and was then sent to Dayton to the Ohio State Fair. After taking the premium, it came, via Toledo, back to Cleveland; it was then sent to Detroit, to the Michigan State Fair. It came to this city again, and was started off to Indianapolis to the Indiana State Fair, and has since returned in fine condition for wintering. At the United States Fair, Mr. Flanders placed a division of the Swarm around the bare neck of a gentleman, and the other division in his hat, and went across the track to a car and had his picture taken with the swarm thus suspended from his chin, showing that, with "movable combs," these insects can be controlled as Rarey tames the horse, and that bees may be shipped with safety.

[The above swarm went over 1,300 miles.]

From the Daily Sentinel, Indianapolis, Ind.

REPORT OF THE STATE FAIR, SEPTEMBER 30, 1863.

Professor W. A. Flanders, of Shelby, Ohio, the inventor of Flanders' celebrated bee-hives, is present with his inimitable show of wit and humor—imparting useful lessons in the art of "*Bee Taming*," bee raising and bee feeding. His hives are valuable and have received the highest testimonials from parties who have them in use. They are considered a perfect preventive against all kinds of enemies to the bee. They are also very simple, and any farmer or farmer's wife can easily understand and use them. The Professor also sells "Sweet Love," a discovery of his own—put up in small bottles for the small sum of 50 cents. This is used for charming swarming, and changing the bees, and so powerful is the attraction that an entire swarm can be collected with three drops of the "*essence*." No person should visit the Fair without making the acquaintance of the Professor. He is worthy of confidence and belief.

[I will add that the Committee awarded me the highest and *only* premium at the above Fair, *for the best method of handling bees*, and that L. Twining, the Bee Tamer, was present and handled his bees.]

TESTIMONIALS.

The following statement is from the Hon. David Williams, of Springfield, Walworth county, Wisconsin, who is now President of the Wisconsin State Agricultural Society, and Vice-President of the Wisconsin State Bee-keepers' Association :

MADISON, Wis., Feb. 9, 1865.

This is to certify that I am very well acquainted with nearly all the patent bee-hives of any note; have the right to the Langstroth patent; am a practical apiarian of over twenty years' experience. I have carefully examined W. A. Flanders' Book Bee-Hive, and will say that I believe it is superior to any I ever saw; and can cheerfully recommend it to apiarians, with the full conviction that it is the *best* hive ever invented. DAVID WILLIAMS.

CARDINGTON, Morrow Co., O., June 23, 1862.

We hereby certify that in the spring of 1861, we took the agency of W. A. Flanders, for the sale of his "Movable Comb Bee Hives," and for rights in Morrow, Union and Knox counties in this State, and as soon as we had tested the hives we purchased the territory above mentioned. Upon a further trial, we bought the right for four additional counties, making seven counties in all.

We have manufactured and sold over three hundred hives this season, and have now on hand none unsold.

We have this day purchased additional territory of Mr. Flanders, as we consider these hives the best now extant.

PHELPS & ANDREWS,
Commission Merchants, Cardington, O.

The following is the opinion of S. B. Parsons, (who first imported the Italian Bee into America,) on Movable Comb Hives.

"It should be clearly understood that a Movable Comb Hive is essential to the successful rearing of this bee, because it enables the bee keeper to introduce the queen more readily, to examine the combs frequently, and at all times to know the condition of his stock."

Opinion of M. Quinby, who has probably the largest apiary in the United States.

"There is not the least doubt in my mind that whatever realizes the greatest possible benefit from his bees, will have to retain the movable combs in some form. The principle — movable combs can hardly be dispensed with."

MADISON, Wis., Feb. 10, 1865

I can fully indorse the above statement of President Williams, as I consider Flanders' bee-hive as far in advance in improvement upon the common movable-comb hives in use as the movable-comb hives are over the old box bee-hives.

(Signed) A. H. BUSH,
Pres. Wisconsin State Bee-Keepers Association.

PREMIUMS AWARDED.

The United States Agricultural Society awarded me the

GRAND SILVER MEDAL,

The First Premium over the following Hives on Exhibition: Langstroth's, Townley's, Palmer & Leedy's, Kelsey's, Harbison's and Underhill's, in the fall of 1860.

At the Ohio State Fair of 1863 my **Book Hive** took the First (and only) Premium, over KING'S "AMERICAN BEE HIVE." LANGSTROTH'S and CORNER'S HIVE, &c., &c.

I have taken **First Premiums** at 23 State Fairs, upwards of 180 County Fairs, and at Town and Independent Fairs without number: in fact I invite competition at the Fairs, as I am enabled to make my entertainments more pleasing to the public, when I have a *smart competition.* (See inside of cover in front of this book.)

What the Manufacturers Say.

CLEVELAND, O., May 21, 1860.

I commenced manufacturing W. A. Flanders' Movable Comb Bee Hives April 1st, 1860, and have continued with the facilities named in the descriptive catalogue accompanying the hives.

I have been unable to fill orders as fast as desired; I have manufactured several patent articles before this, and none of them have met with so ready sale, or given so general satisfaction as these Bee Hives. I shall, hereafter, be ready to fill orders at three dollars and fifty cents each, and get out two hundred hives a week.

ISAAC STURTEVANT.

How Hives and Rights Sell.

The question is often asked by my correspondents, "How do your hives sell?" Again, "Do bee keepers approve them?" In order to save time and expense incurred by answering a multitude of letters filled with interrogatories of like character, I have inserted this article.

I have yet to know of any person who purchased territorial rights for my hives, and who devoted his time and attention to their manufacture and sale, that did not consider it a highly profitable investment. Some, who have purchased thousands of dollars, have re-invested in rights after their sales of their first purchase. Mr. James Newbury, of Avon, (P. O. address, Rochester,) Mich., has paid over twelve hundred dollars for territorial rights, at three different purchases.

Messrs Phelps & Andrews, Cardington, Morrow county, Ohio, have purchased territory at four different times, and paid over one thousand dollars. Geo. M. Cady, of Northfield, Vt., has paid me over four thousand dollars for territory. Calvin Cady, six hundred dollars. H. P. Allen, of Bowling Green, Ky., (brother-in-law of Geo. M. Cady) bought over twelve

hundred dollars worth of territory. George Roberts and James D. Field, of Shelby, Ohio, fifteen hundred dollars. These gentlemen have made and sold upwards of eleven hundred hives in two years, in Richland and Huron counties, Ohio. I could increase the number by naming hundreds of purchasers of farm, township and county rights, if it would be necessary. If required, highly reputable reference can be added, all testifying that no other business yields more handsome profits, in proportion to the amount of capital invested.

☞ Many parties write to me, asking for hives on credit, either to *try* or sell to others. I will here re-reply to all such correspondents, that I have all I can possibly do by answering and filling *cash* orders, and that owing to the unsettled condition of the country and the price of stock, I am necessitated to do a *cash business only.*

Parties need not fear to send the cash. They will certainly have their orders filled promptly and faithfully, or the money refunded to them. Money can be safely forwarded by mail, if wrapped in a thick piece of letter paper enclosed in a buff colored envelope. Fifteen dollars, or over, may be sent per express, if *pre-paid* by the sender, or by post-office order on Shelby, Ohio. Government currency preferred at all times, but other current money will be received. All communications, containing a stamp to pay postage in answer, will be promptly and cheerfully answered. Parties writing will please write their names, Post Office, County and State, plainly and legibly, so as to avoid mistakes or miscarriage.

When farm rights are ordered, mention the town, county and State in which it is to be used, in order that the deed may contain them in the proper manner.

Parties ordering hives with rights, will please look over the list of prices and articles, and order at one time all that may be wanted. Those who live at some distance can obtain all the necessary information to enable them to embark in the bee and bee-hive business, by correspondence as well as by a personal interview, therefore saving traveling expenses.

All articles carefully shipped by mail, express, or

as otherwise directed, to every part of the United States.

Persons desirous of agencies for the sale of rights, hives, &c., should write immediately, stating acquaintance with bee culture, the number of years engaged, and the character of hives used, &c.

Parties writing for unsold territory: I reserve it until he has decided to purchase; if the territory should be sold, I notify him of the fact.

The price of territory depends upon the population and the bee culture within it; as a general price, one per cent. on the population.

☞ For rights in Indiana, address Wm. H. McDaniel, New Carlisle, St. Joseph county, Indiana.

☞ For rights in Michigan, address James Newbury, Rochester, Mich.

☞ For rights in Illinois, address Dysart, Burkett & Co., Nachusa, Lee county, Illinois.

1867——1868.

PRICE LIST FOR HIVES, ETC.

One Farm Right (and future improvements) to use our Hive	$5 00
Farm Rights as above, and one Hive, Bee Book and box of Bee Charm	10 00
Bee Books by mail, prepaid, single	25
" " " per dozen	2 00
" by express, per hundred	12 00
Box of Bee Charm, prepaid, by mail	50
" " dozen per express	3 00
I will ship to order one Bee Hive *this spring*, and give the Farm Right for one farm, Bee Charm and Book, for	10 00
County Rights are worth from	100 00 to 400 00
Town Rights are worth from	25 00 to 50 00
Nice Model Hives, to those who have the right of use	5 00

For price of Italian queens, or full stocks, see our Circulars for each year.

Club Rates.

Three persons constitute a club.

For three Hives, three Rights, with Bee Book, Charm, &c., &c., $25.

Agencies will be given to a club of three, for the township, at 50 per cent.; selling rights at $5 each, after the club have paid for their farm rights as above. The right, by deed for the town, will be given to such purchasers for $10 after the above club is formed.

The above liberal offers are made, in order to get the hives introduced into every town in the loyal States. They stand pre-eminent as the best bee-hives in the United States. For prices for queen bees and full stocks, send for our circulars each year.

It has been the study of apiarians to construct movable-comb hives that would insure the bees to build straight and regular combs on each frame, of a uniform thickness suitable for brood combs. None have heretofore succeeded. After a long series of experiments, I have finally discovered the true principle. There is no conjectural theory belonging to it, which candid men will freely admit on examination and experience. The *modus operandi* cannot be publicly explained in a work of this nature. I reserve it for private instruction, according to terms above published. Not one swarm in a hundred can possibly build contrary to the direction. It is impossible to obtain *all* the combs correctly on the frames in the common movable-comb hives, without my improvement. If this assertion is discredited, experiment on your hives and see the result. I will number such among my purchasers.

(See directions in all my hives.)

Address: W. A. FLANDERS & CO.,
Shelby, O.

Our circulars for each year are published in January and sent to all, free of charge. Bee keepers and others should order our circulars early in the season of each year. Send us the names and post-office address of bee keepers.

FROM REV. THOS. LOVE.

WATERFORD, Pa., Jan. 1. 1851.

W. A. FLANDERS, Esq.—*Dear Sir:*—I have examined your "Movable Comb Hive," and give it the preference of anything I have seen. We have four patent hives in our village, but I consider yours the best. Yours very truly,

THOMAS LOVE.

The following letter is from George W. Ogden, Esq,, the celebrated breeder of Cashmere Goats, who resides near Cincinnati, Ohio.

MONTGOMERY, Hamilton Co., O., July 6, 1863.

W. A. FLANDERS:—*Dear Sir,*—I have been keeping bees for about ten years, and never made much progress until lately, on account of not having the proper information and instruction.

I moved from Kentucky to this place and bought a farm *expressly* to cultivate fruit and bees in Ohio, as well as in Kentucky.

I have been using your hives for two years past, and I believe them to be the *best* that is now made.

Truly yours,

GEO. W. OGDEN.

DAVENPORT, Iowa, Sept. 30, 1864.

This is to certify that Mr. W. A. Flanders, of Shelby, Ohio, has been awarded the *first* premium on the best method of training bees; also the same premium on his Book Bee-Hive, at the Iowa State Fair, just closed, at Burlington, Iowa.

JOHN LAMBERT,
Assistant Treasurer, and Chairman of the Committee Awarding Premiums on Bee-Hives, &c.

Affidavit.

"From an old (eleven year old) swarm of bees which I transferred from an old Box Hive into Flanders' Hive June 11th, 1860, I made a new swarm on the eighth day of July following, and I afterwards took forty pounds and ten ounces of nice box honey from it. Another which I transferred May 25, 1860, I have made one swarm and taken from it one hundred and twenty-five pounds of Box Honey, and three filled frames which I have used to strengthen another swarm.

R. R. MARSH.

STREETSBORO', O., Oct 1, 1860.

Sworn and subscribed to before me, P. A. Gollier, notary public, Cuyahoga county, Ohio.

Extract of a letter from the Agricultural Editor of the Ohio Farmer.

FLANDERS' BOOK BEE HIVE,

"Combines all the good qualities which the inventor has ever seen, or thought of in this line. If the bees do not appreciate this combination of mechanical genius, and go to work with renewed zeal, they must be ungrateful little people.

S. D. HARRIS,

CLEVELAND, Feb. 2, 1864.

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